

Remarks

To further prosecution of the instant application, Applicant has amended Claims 19, 30, 33, 37, and 38. The claim amendments do not add subject matter and have antecedent basis in the application specification.

Specifically, the amendments to Claim 19 have antecedent basis in the published specification, U.S. Publication No. 2007/0010773, at Paragraph [0035], first sentence; Paragraph [0037], first sentence; and Paragraph [0039].

Amendments to Claims 30 and 33 have a basis at Paragraphs [0057] and [0058] and Figures 7a and 7b.

In addition, amendments to Claim 37 have a basis at Paragraph 37, last sentence and Paragraph [0044], second and third sentences.

Further, amendments to Claim 38 have antecedent basis at Paragraph [0035], first sentence; Paragraph [0037], first sentence; Paragraph [0039]; Paragraphs [0057] and [0058]; and Figures 7a and 7b.

Applicant has also added herein new Claims 40 and 41. Each claim has antecedent basis at Paragraph [0044], first sentence.

Claims 19-20, 22-25, and 27-41 are currently pending with Claims 19, 37, and 38 in independent form.

Applicant respectfully requests reconsideration.

Rejection of Claims 19, 20, 23-25, and 27-39 under 35 U.S.C. § 103(a)

Claims 19, 20, 23-25, and 27-39 stand rejected under § 103(a) as being unpatentable over U.S. 4,559,934 to Philipp (“Philipp”). Applicant respectfully traverses the Examiner’s rejection of the claims under § 103(a) as being unpatentable over Philipp.

As the Examiner knows, the key to support any obviousness rejection under § 103 is a clear articulation of the reasons why the claimed invention would have been obvious in view of the applied prior art. According to *KSR*, an explicit analysis of the prior art relied upon must be provided, resulting in an articulated reasoning to support the conclusion the claimed invention is obvious in view of the teachings of the applied art. In view of the foregoing amendments to independent Claims 19, 37, and 38, the Examiner’s rejections under § 103(a) are not supported by any reasons why the claimed inventions would have been obvious in view of Philipp.

Applicant respectfully submits that Claims 19, 37, and 38 are not obvious in view of Philipp because Philipp fails to disclose, teach, or suggest at least the rib specified in these Claims.

In particular, Claim 19 is directed to an ankle-foot orthosis and has been amended to include:

*“ . . . a flexible rib of silicone elastomer **bonded** to a region of the compression stocking, **said rib obtained by applying a silicone elastomer to the compression stocking so that the elastomer impregnates at least a portion of the compression stocking and forms, when cured, a bond between the rib and the compression stocking . . .”***

Philipp discloses a foot support assembly including a sock (1) and a plate member (7) fastened to a surface of the sock. (col. 2, lines 5145-52). The two ends (7a) and (7b) of the plate member are seated in two pockets (3) and (5) that are firmly sewn into or onto the sock, which permit insertion or removal of the plate member into the pockets. (col. 3, lines 1-3 and col. 4, lines 38-47). The pockets (3) and (5) may also be “sewn on over the ends of the plate so that the plate is permanently secured to the stocking.” (col. 3, lines 42-44).

Philipp further discloses,

Putting on the sock is facilitated when the plate is removed since in practice it is simpler first to put on the sock without the plate and thereafter insert the plate in the pockets. The sock is more troublesome to put on when the plate is inserted first. (col. 3, lines 4-9).

In the alternative, the form of the plate ends and of the pockets can be adapted to one another so that the plate is removably insertable in the pockets. In practice it has provided that the insertable type plate facilitates handling since a plate permanently joined with the sock makes it difficult to put on or take off the sock. On the other hand, the insertion of the plate into the elastic sock after it is on presents no difficulties. (col. 4, lines 44-52).

Applicant respectfully submits that Philipp does not disclose, nor teach or suggest, the flexible rib of silicone elastomer bonded to a region of the compression stocking, as specified in Claim 19. Rather, Philipp discloses that the plate is fastened or secured to the sock by inserting the ends of the plate member into the pockets. Philipp also discloses, in one configuration of the device, the pockets can be sewn over the ends of the plate such that the plate is “permanently secured” to the sock. Applicant respectfully submits the resulting devices of Philipp are structurally different from the rib specified in Claim 19. More specifically, Philipp discloses the

rib is as a separate element of the device that is “fastened” or “secured” to the sock via (1) inserting the ends of the plate member into the respective pockets or (2) by sewing the pockets over the ends of the plate member. This is in contrast to Claim 19 that specifies the rib is bonded to a region of the compression stocking, and obtained by applying a silicone elastomer to the compression stocking so that the elastomer impregnates at least a portion of the compression stocking and forms, when cured, a bond between the rib and the compression stocking. Philipp fails to disclose, teach, or suggest these limitations.

In further contrast to Claim 19, Philipp discloses the plate member is constructed of a plastic, such as “Ortholen” (a high molecular weight polyethylene), or steel, which suggests that the plate member is formed separately from the sock and thereafter fastened or joined to the sock.

In still further contrast to Claim 19, Philipp’s disclosure that the plate member is constructed of plastic (Ortholen) or steel indicates the Philipp plate is rigid or essentially rigid to provide the required support against excessive plantarflexion or “footdrop,” as well as to hold the foot and ankle in the correct shape by virtue of the rib’s rigidity when the patient lifts his/her foot off the ground. The rib specified in Claim 19 is flexible and

“... has a *resilience* that is appropriate for resisting the particular degree of plantarflexion experienced by the patient.”

The flexible and resilient rib of Claim 19 allows the foot to move relative to the ankle when the patent lifts his/her foot off the ground, while excessive plantarflexion is avoided. One advantage of this arrangement is recited in Applicant’s application specification at paragraph [0063]:

“... the orthosis of the invention can significantly augment dorsiflexion during the swing through phase of a patient’s gait cycle. The principal reason for this is believed to be that the elastic structure and resilient rib store energy when compressed, and this energy is released during the swing through phase of the patient’s gait cycle.

It is anticipated, therefore, that patients will not only find that the orthosis of the embodiments tackle the problem of plantarflexion but also actively assist the walking process.”

Applicant respectfully submits that, in effect, the claimed orthosis may make it easier for users to walk by storing energy in one phase of gait, and releasing the energy in another phase of gait, such released energy potentially assisting the walking process.

Nevertheless, Philipp clearly does not disclose, teach, or suggest the flexible rib of a silicone elastomer having a resilience that addresses a patient's particular degree of plantarflexion.

Applicants respectfully submit that both embodiments of the device Philipp discloses do not provide a teaching or suggestion that would motivate one of ordinary skill to modify the device of Philipp to include the rib, as specified in Claim 19.

Moreover, Philipp teaches away from bonding the rib to the sock and providing a flexible rib having a resilience for the reasons given above. Philipp admits that a permanently secured plate member would result in difficulty in putting the sock on or taking the sock off and discloses the plate member should be detachable from the sock. Even in the disclosed embodiment whereby the pockets are sewn over the plate member ends such that the plate member is "permanently secured" to the sock, Philipp fails to disclose the claimed rib of Claim 19.

Thus, Applicant respectfully submits Philipp does not provide a disclosure, teaching, or suggestion, or any reason, why one of ordinary skill in the art at the time of Applicant's invention would modify the device of Philipp to include the rib specified in Claim 19. Applicant, therefore, respectfully submits that Claim 19 is not obvious and is patentable over Philipp.

Accordingly, Applicant requests withdrawal of the rejection of Claim 19 under § 103(a).

Claims 20, 22-25, 27-36, and 39-40 depend from Claim 19 and by virtue of at least their dependency on Claim 19 are patentable for at least the reasons given above.

Accordingly, Applicant respectfully requests withdrawal of the rejection of Claims 19, 20, 22-25, 27-36, and 40 under § 103(a).

For at least the reasons discussed above with respect to Claim 19, Applicant respectfully submits that amended independent Claim 37 is not obvious in view of Philipp. More particularly, Philipp fails to disclose, teach, or suggest the method steps of Claim 37 including:

"... applying the *silicone elastomer* directly to the compression stocking, such that, the silicone elastomer *impregnates* the compression stocking and forms a rib that will in use overlie the dorsum of the patient's foot;

curing the silicone elastomer *to form a bond between the rib and the compression stocking ...*"

Claim 37, therefore, is not obvious and is patentable over Philipp. Applicant respectfully requests withdrawal of the rejection of Claim 37 under § 103(a).

Claim 39 depends from Claim 37 and is patentable at least due to its dependence on Claim 37. Withdrawal of the rejection is respectfully requested.

Similarly, amended independent Claim 38 is not obvious in view of Philipp for at least the reasons Applicant provides in the discussion of Claim 19. Claim 38 is directed to an ankle-foot orthosis and includes the limitation to:

“ . . . a silicone rib formed directly on and thereby affixed to a region of the stocking which overlies the dorsum of the patient’s foot in use, said silicone rib obtained by applying a suitable silicone material to the compression stocking so that the silicone material *impregnates* the region of the stocking and *forms, when cured, a bond between the rib and the stocking*;

Claim 38, therefore, is patentable over Philipp. Accordingly, Applicant respectfully requests withdrawal of the rejection of Claim 38 under § 103(a).

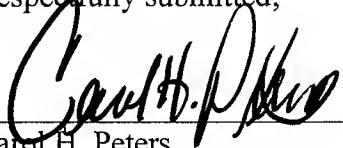
Rejection of Claim 22 under 35 U.S.C. § 103(a)

Claim 22 is rejected as being unpatentable over Philipp in view of U.S. 6,430,970 to Gardon-Mollard et al. (“Gardon-Mollard”). Applicant respectfully traverses the rejection and submits that Claim 22 is patentable over the cited combination because it depends from Claim 19 and, therefore, is patentable for at least the same reasons given above.

Withdrawal of the rejection of Claim 22 is respectfully requested.

Based on the foregoing amendments and discussion, Applicant respectfully submits the instant application is in condition for allowance, and an action to this effect is respectfully requested. Should the Examiner have any questions concerning this response, he is invited to telephone the undersigned.

Respectfully submitted,


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